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3.1.4.2, and 3.1.4.3.

- (C) Archiving products and data as specified in 3.1.4.6.
- (d) Responding to the Maintenance Processor Subsystem (MPS) requests for status and performance data in accordance with NAS-IR-50000002 as specified in 3.1.4.6.
- (e) Simultaneous and continuous receipt of all radar data received from up to 27 Next-Generation Weather Radars (NEXRAD) at the peak rate defined in UNISYS 1208304D and UNISYS 1208378.
- (f) Processing and storage of all radar data received from up to 27 NEXRADs, as specified in 3.1.4.1.
- (g) Request of request/reply products (RRP) at the maximum rate from the NEXRADs during a request interval, as specified in 3.1.4.1.
- (h) Continuous transmission of weather data products through the LCN to ACCC at the peak rate defined in NAS-IR-21012501.
- (i) Transmission of weather data products to WMSCR at the peak rate defined in NAS-IR-25072511.
- (j) Transmission of all radar data received from up to 11 directly connected NEXRADs within the ARTCC/ACF to up to 7 neighboring RWPs at the peak rate defined in NAS-IR-43020001.

3.1.2 Threat. Not Applicable.

3.1.3 System Modes and States. The RWP will exist in three modes which are mutually exclusive. The three modes are OFF, INITIALIZE/REINITIALIZE, and OPERATIONAL. Transition paths between the three modes are depicted in Figure 1.

3.1.3.1 OFF Mode. The OFF mode will exist when the RWP is not in either INITIALIZE/REINITIALIZE or OPERATIONAL modes.

3.1.3.2 INITIALIZE/REINITIALIZE Mode. The INITIALIZE/REINITIALIZE mode will exist when the RWP is performing initialization or reinitialization functions.

3.1.3.3 OPERATIONAL Mode. The OPERATIONAL mode will provide for the operation of all System functions. The OPERATIONAL mode has two states, normal and degraded, which are mutually exclusive.

3.1.3.3.1 NORMAL State. In the NORMAL state, all RWP functions will be available and will perform within specification limits.

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3.1.4.2, and 3.1.4.3.

- (c) Archiving products and data as specified in 3.1.4.6.
- (d) Responding to the Maintenance Processor Subsystem (MPS) requests for status and performance data in accordance with NAS-IR-5000002 as specified in 3.1.4.6.
- (e) Simultaneous and continuous receipt of all radar data received from up to 27 Next-Generation Weather Radars (NEXRAD) at the peak rate defined in UNISYS 1208304D and UNISYS 1208378.
- (f) Processing and storage of all radar data received from up to 27 NEXRADs, as specified in 3.1.4.1.
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- (i) Transmission of weather data products to WMSCR at the peak rate defined in NAS-IR-25072511.
- (j) Transmission of all radar data received from up to 11 directly connected NEXRADs within the ARICC/ACF to up to 7 neighboring RWPs at the peak rate defined in NAS-IR-43020001.

3.1.2 Threat. Not Applicable.

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- (f) Processing and storage of all radar data received from up to 27 NEXRADs, as specified in 3.1.4.1.
- (g) Request of request/reply products (RRP) at the maximum rate from the NEXRADs during a request interval, as specified in 3.1.4.1.
- (h) Continuous transmission of weather data products through the LCN to ACCC at the peak rate defined in NAS-IR-21012501.
- (i) Transmission of weather data products to WMSCR at the peak rate defined in NAS-IR-25072511.
- (j) Transmission of all radar data received from up to 11 directly connected NEXRADs within the ARIC/ACF to up to 7 neighboring RWPs at the peak rate defined in NAS-IR-43020001.

3.1.2 Threat. Not Applicable.

3.1.3 System Modes and States. The RWP will exist in three modes which are mutually exclusive. The three modes are OFF, INITIALIZE/REINITIALIZE, and OPERATIONAL. Transition paths between the three modes are depicted in Figure 1.

3.1.3.1 OFF Mode. The OFF mode will exist when the RWP is not in either INITIALIZE/REINITIALIZE or OPERATIONAL modes.

3.1.3.2 INITIALIZE/REINITIALIZE Mode. The INITIALIZE/REINITIALIZE mode will exist when the RWP is performing initialization or reinitialization functions.

3.1.3.3 OPERATIONAL Mode. The OPERATIONAL mode will provide for the operation of all System functions. The OPERATIONAL mode has two states, normal and degraded, which are mutually exclusive.

3.1.3.3.1 NORMAL State. In the NORMAL state, all RWP functions will be available and will perform within specification limits,

3.1.4.2, and 3.1.4.3.

- (c) Archiving products and data as specified in 3.1.4.6.
- (d) Responding to the Maintenance Processor Subsystem (MPS) requests for status and performance data in accordance with NAS-IR-5000002 as specified in 3.1.4.6.
- (e) Simultaneous and continuous receipt of all radar data received from up to 27 Next-Generation Weather Radars (NEXRAD) at the peak rate defined in UNISYS 1208304D and UNISYS 1208378.
- (f) Processing and storage of all radar data received from up to 27 NEXRADs, as specified in 3.1.4.1.
- (g) Request of request/reply products (RRP) at the maximum rate from the NEXRADs during a request interval, as specified in 3.1.4.1.
- (h) Continuous transmission of weather data products through the LCN to ACCC at the peak rate defined in NAS-IR-21012501.
- (i) Transmission of weather data products to WMSCR at the peak rate defined in NAS-IR-25072511.
- (j) Transmission of all radar data received from up to 11 directly connected NEXRADs within the ARICCC/ACF to up to 7 neighboring RWPs at the peak rate defined in NAS-IR-43020001.

3.1.2 Threat. Not Applicable.

3.1.3 System Modes and States. The RWP will exist in three modes which are mutually exclusive. The three modes are OFF, INITIALIZE/REINITIALIZE, and OPERATIONAL. Transition paths between the three modes are depicted in Figure 1.

3.1.3.1 OFF Mode. The OFF mode will exist when the RWP is not in either INITIALIZE/REINITIALIZE or OPERATIONAL modes.

3.1.3.2 INITIALIZE/REINITIALIZE Mode. The INITIALIZE/REINITIALIZE mode will exist when the RWP is performing initialization or reinitialization functions.

3.1.3.3 OPERATIONAL Mode. The OPERATIONAL mode will provide for the operation of all System functions. The OPERATIONAL mode has two states, normal and degraded, which are mutually exclusive.

3.1.3.3.1 NORMAL State. In the NORMAL state, all RWP functions will be available and will perform within specification limits,

3.1.4.2, and 3.1.4.3.

- (c) Archiving products and data as specified in 3.1.4.6.
- (d) Responding to the Maintenance Processor Subsystem (MPS) requests for status and performance data in accordance with NAS-IR-5000002 as specified in 3.1.4.6.
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- (i) Transmission of weather data products to WMSCR at the peak rate defined in NAS-IR-25072511.
- (j) Transmission of all radar data received from up to 11 directly connected NEXRADs within the ARICCC/ACF to up to 7 neighboring RWPs at the peak rate defined in NAS-IR-43020001.

3.1.2 Threat. Not Applicable.

3.1.3 System Modes and States. The RWP will exist in three modes which are mutually exclusive. The three modes are OFF, INITIALIZE/REINITIALIZE, and OPERATIONAL. Transition paths between the three modes are depicted in Figure 1.

3.1.3.1 OFF Mode. The OFF mode will exist when the RWP is not in either INITIALIZE/REINITIALIZE or OPERATIONAL modes.

3.1.3.2 INITIALIZE/REINITIALIZE Mode. The INITIALIZE/REINITIALIZE mode will exist when the RWP is performing initialization or reinitialization functions.

3.1.3.3 OPERATIONAL Mode. The OPERATIONAL mode will provide for the operation of all System functions. The OPERATIONAL mode has two states, normal and degraded, which are mutually exclusive.

3.1.3.3.1 NORMAL State. In the NORMAL state, all RWP functions will be available and will perform within specification limits,

3.1.4.2, and 3.1.4.3.

- (c) Archiving products and data as specified in 3.1.4.6.
- (d) Responding to the Maintenance Processor Subsystem (MPS) requests for status and performance data in accordance with NAS-IR-5000002 as specified in 3.1.4.6.
- (e) Simultaneous and continuous receipt of all radar data received from up to 27 Next-Generation Weather Radars (NEXRAD) at the peak rate defined in UNISYS 1208304D and UNISYS 1208378.
- (f) Processing and storage of all radar data received from up to 27 NEXRADs, as specified in 3.1.4.1.
- (g) Request of request/reply products (RRP) at the maximum rate from the NEXRADs during a request interval, as specified in 3.1.4.1.
- (h) Continuous transmission of weather data products through the LCN to ACCC at the peak rate defined in NAS-IR-21012501.
- (i) Transmission of weather data products to WMSCR at the peak rate defined in NAS-IR-25072511.
- (j) Transmission of all radar data received from up to 11 directly connected NEXRADs within the ARTCC/ACF to up to 7 neighboring RWPs at the peak rate defined in NAS-IR-43020001.

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3.1.3 System Modes and States. The RWP will exist in three modes which are mutually exclusive. The three modes are OFF, INITIALIZE/REINITIALIZE, and OPERATIONAL. Transition paths between the three modes are depicted in Figure 1.

3.1.3.1 OFF Mode. The OFF mode will exist when the RWP is not in either INITIALIZE/REINITIALIZE or OPERATIONAL modes.

3.1.3.2 INITIALIZE/REINITIALIZE Mode. The INITIALIZE/REINITIALIZE mode will exist when the RWP is performing initialization or reinitialization functions.

3.1.3.3 OPERATIONAL Mode. The OPERATIONAL mode will provide for the operation of all System functions. The OPERATIONAL mode has two states, normal and degraded, which are mutually exclusive.

3.1.3.3.1 NORMAL State. In the NORMAL state, all RWP functions will be available and will perform within specification limits,

3.1.4.2, and 3.1.4.3.

- (c) Archiving products and data as specified in 3.1.4.6.
- (d) Responding to the Maintenance Processor Subsystem (MPS) requests for status and performance data in accordance with NAS-IR-5000002 as specified in 3.1.4.6.
- (e) Simultaneous and continuous receipt of all radar data received from up to 27 Next-Generation Weather Radars (NEXRAD) at the peak rate defined in UNISYS 1208304D and UNISYS 1208378.
- (f) Processing and storage of all radar data received from up to 27 NEXRADs, as specified in 3.1.4.1.
- (g) Request of request/reply products (RRP) at the maximum rate from the NEXRADs during a request interval, as specified in 3.1.4.1.
- (h) Continuous transmission of weather data products through the LCN to ACCC at the peak rate defined in NAS-IR-21012501.
- (i) Transmission of weather data products to WMSCR at the peak rate defined in NAS-IR-25072511.
- (j) Transmission of all radar data received from up to 11 directly connected NEXRADs within the ARTCC/ACF to up to 7 neighboring RWPs at the peak rate defined in NAS-IR-43020001.

3.1.2 Threat. Not Applicable.

3.1.3 System Modes and States. The RWP will exist in three modes which are mutually exclusive. The three modes are OFF, INITIALIZE/REINITIALIZE, and OPERATIONAL. Transition paths between the three modes are depicted in Figure 1.

3.1.3.1 OFF Mode. The OFF mode will exist when the RWP is not in either INITIALIZE/REINITIALIZE or OPERATIONAL modes.

3.1.3.2 INITIALIZE/REINITIALIZE Mode. The INITIALIZE/REINITIALIZE mode will exist when the RWP is performing initialization or reinitialization functions.

3.1.3.3 OPERATIONAL Mode. The OPERATIONAL mode will provide for the operation of all System functions. The OPERATIONAL mode has two states, normal and degraded, which are mutually exclusive.

3.1.3.3.1 NORMAL State. In the NORMAL state, all RWP functions will be available and will perform within specification limits,

3.1.4.2, and 3.1.4.3.

- (c) Archiving products and data as specified in 3.1.4.6.
- (d) Responding to the Maintenance Processor Subsystem (MPS) requests for status and performance data in accordance with NAS-IR-5000002 as specified in 3.1.4.6.
- (e) Simultaneous and continuous receipt of all radar data received from up to 27 Next-Generation Weather Radars (NEXRAD) at the peak rate defined in UNISYS 1208304D and UNISYS 1208378.
- (f) Processing and storage of all radar data received from up to 27 NEXRADs, as specified in 3.1.4.1.
- (g) Request of request/reply products (RRP) at the maximum rate from the NEXRADs during a request interval, as specified in 3.1.4.1.
- (h) Continuous transmission of weather data products through the LCN to ACCC at the peak rate defined in NAS-IR-21012501.
- (i) Transmission of weather data products to WMSCR at the peak rate defined in NAS-IR-25072511.
- (j) Transmission of all radar data received from up to 11 directly connected NEXRADs within the ARTCC/ACF to up to 7 neighboring RWPs at the peak rate defined in NAS-IR-43020001.

3.1.2 Threat. Not Applicable.

3.1.3 System Modes and States. The RWP will exist in three modes which are mutually exclusive. The three modes are OFF, INITIALIZE/REINITIALIZE, and OPERATIONAL. Transition paths between the three modes are depicted in Figure 1.

3.1.3.1 OFF Mode. The OFF mode will exist when the RWP is not in either INITIALIZE/REINITIALIZE or OPERATIONAL modes.

3.1.3.2 INITIALIZE/REINITIALIZE Mode. The INITIALIZE/REINITIALIZE mode will exist when the RWP is performing initialization or reinitialization functions.

3.1.3.3 OPERATIONAL Mode. The OPERATIONAL mode will provide for the operation of all System functions. The OPERATIONAL mode has two states, normal and degraded, which are mutually exclusive.

3.1.3.3.1 NORMAL State. In the NORMAL state, all RWP functions will be available and will perform within specification limits,

Mosaics, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.2 **Mosaic Area**. The mosaic area shall be an adaptable RWP area of interest, in accordance with the **RWP Area Definition** adaptation as defined in 60.4.3.

3.1.4.1.5.3 **Coverage Determination for Image Mosaics**.

3.1.4.1.5.3.1 **Coverage Priority**. Each mosaic altitude class shall have an associated mosaic coverage priority in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6, which contains for each grid cell a hierarchical list (primary, secondary, tertiary, quaternary, or no NEXRAD coverage) of NEXRADs from which to choose the value for that grid cell.

3.1.4.1.5.3.2 **Product Generation**. Each mosaic product shall be generated using the coverage priority of one of the three mosaic altitude classes, in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6. The class used for each product shall be adaptable, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.3.3 **Contributing NEXRADs Data** for each grid cell in the mosaic area shall be supplied by the highest priority available NEXRAD for that cell.

3.1.4.1.5.3.4 **No Coverage**. All grid cells in the mosaic for which there is no coverage shall be assigned a no-valid-data code, as referenced in 3.1.4.1.4.2 .

3.1.4.1.5.4 **Reconfiguration and Restoration for Image Mosaics**.

3.1.4.1.5.4.1 **Determination Of Unavailability**. A NEXRAD shall be declared unavailable:

- (a) If no RIPs from that NEXRAD are received by the RWP within a volume scan interval plus an adaptable time interval, in accordance with **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6.
- (b) If the meteorologist has caused the NEXRAD to become unavailable for mosaic contribution.

3.1.4.1.5.4.2 **Mosaic Coverage Reconfiguration**. When a NEXRAD, based on the preceding criteria, is determined by the RWP to be unavailable, grid cells in the most current retained versions of mosaic products to which the NEXRAD had been supplying data shall be supplied with data available from NEXRADs with overlapping coverage so that each cell has the highest priority data level available, as defined in section 3.1.4.1.5.3.1. The RWP shall provide coverage from each available overlapping NEXRAD within a volume scan period plus 45 seconds from the time of the determination of the NEXRAD's unavailability.

Mosaics, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.2 **Mosaic Area.** The mosaic area shall be an adaptable RWP area of interest, in accordance with the **RWP Area Definition** adaptation as defined in 60.4.3.

3.1.4.1.5.3 **Coverage Determination for Image Mosaics.**

3.1.4.1.5.3.1 **Coverage Priority.** Each mosaic altitude class shall have an associated mosaic coverage priority in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6, which contains for each grid cell a hierarchical list (primary, secondary, tertiary, quaternary, or no NEXRAD coverage) of NEXRADs from which to choose the value for that grid cell.

3.1.4.1.5.3.2 **Product Generation.** Each mosaic product shall be generated using the coverage priority of one of the three mosaic altitude classes, in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6. The class used for each product shall be adaptable, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.3.3 **Contributing NEXRADs.** Data for each grid cell in the mosaic area shall be supplied by the highest priority available NEXRAD for that cell.

3.1.4.1.5.3.4 **No Coverage.** All grid cells in the mosaic for which there is no coverage shall be assigned a no-valid-data code, as referenced in 3.1.4.1.4.2 .

3.1.4.1.5.4 **Reconfiguration and Restoration for Image Mosaics.**

3.1.4.1.5.4.1 **Determination Of Unavailability.** A NEXRAD shall be declared unavailable:

- (a) If no RIPs from that NEXRAD are received by the RWP within a volume scan interval plus an adaptable time interval, in accordance with **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6.
- (b) If the meteorologist has caused the NEXRAD to become unavailable for mosaic contribution.

3.1.4.1.5.4.2 **Mosaic Coverage Reconfiguration.** When a NEXRAD, based on the preceding criteria, is determined by the RWP to be unavailable, grid cells in the most current retained versions of mosaic products to which the NEXRAD had been supplying data shall be supplied with data available from NEXRADs with overlapping coverage so that each cell has the highest priority data level available, as defined in section 3.1.4.1.5.3.1. The RWP shall provide coverage from each available overlapping NEXRAD within a volume scan period plus 45 seconds from the time of the determination of the NEXRAD's unavailability.

Mosaics, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.2 **Mosaic Area.** The mosaic area shall be an adaptable RWP area of interest, in accordance with the **RWP Area Definition** adaptation as defined in 60.4.3.

3.1.4.1.5.3 **Coverage Determination for Image Mosaics.**

3.1.4.1.5.3.1 **Coverage Priority.** Each mosaic altitude class shall have an associated mosaic coverage priority in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6, which contains for each grid cell a hierarchical list (primary, secondary, tertiary, quaternary, or no NEXRAD coverage) of NEXRADs from which to choose the value for that grid cell.

3.1.4.1.5.3.2 **Product Generation.** Each mosaic product shall be generated using the coverage priority of one of the three mosaic altitude classes, in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6. The class used for each product shall be adaptable, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.3.3 **Contributing NEXRADs.** Data for each grid cell in the mosaic area shall be supplied by the highest priority available NEXRAD for that cell.

3.1.4.1.5.3.4 **No Coverage.** All grid cells in the mosaic for which there is no coverage shall be assigned a no-valid-data code, as referenced in 3.1.4.1.4.2 .

3.1.4.1.5.4 **Reconfiguration and Restoration for Image Mosaics.**

3.1.4.1.5.4.1 **Determination Of Unavailability.** A NEXRAD shall be declared unavailable:

- (a) If no RIPS from that NEXRAD are received by the RWP within a volume scan interval plus an adaptable time interval, in accordance with **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6.
- (b) If the meteorologist has caused the NEXRAD to become unavailable for mosaic contribution.

3.1.4.1.5.4.2 **Mosaic Coverage Reconfiguration.** When a NEXRAD, based on the preceding criteria, is determined by the RWP to be unavailable, grid cells in the most current retained versions of mosaic products to which the NEXRAD had been supplying data shall be supplied with data available from NEXRADs with overlapping coverage so that each cell has the highest priority data level available, as defined in section 3.1.4.1.5.3.1. The RWP shall provide coverage from each available overlapping NEXRAD within a volume scan period plus 45 seconds from the time of the determination of the NEXRAD's unavailability.

Mosaics, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.2 **Mosaic Area**. The mosaic area shall be an adaptable RWP area of interest, in accordance with the **RWP Area Definition** adaptation as defined in 60.4.3.

3.1.4.1.5.3 **Coverage Determination for Image Mosaics**.

3.1.4.1.5.3.1 **Coverage Priority**. Each mosaic altitude class shall have an associated mosaic coverage priority in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6, which contains for each grid cell a hierarchical list (primary, secondary, tertiary, quaternary, or no NEXRAD coverage) of NEXRADs from which to choose the value for that grid cell.

3.1.4.1.5.3.2 **Product Generation**. Each mosaic product shall be generated using the coverage priority of one of the three mosaic altitude classes, in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6. The class used for each product shall be adaptable, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.3.3 **Contributing NEXRADs**. Data for each grid cell in the mosaic area shall be supplied by the highest priority available NEXRAD for that cell.

3.1.4.1.5.3.4 **No Coverage**. All grid cells in the mosaic for which there is no coverage shall be assigned a no-valid-data code, as referenced in 3.1.4.1.4.2 .

3.1.4.1.5.4 **Reconfiguration and Restoration for Image Mosaics**.

3.1.4.1.5.4.1 **Determination Of Unavailability**. A NEXRAD shall be declared unavailable:

- (a) If no RIPs from that NEXRAD are received by the RWP within a volume scan interval plus an adaptable time interval, in accordance with **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6.
- (b) If the meteorologist has caused the NEXRAD to become unavailable for mosaic contribution.

3.1.4.1.5.4.2 **Mosaic Coverage Reconfiguration**. When a NEXRAD, based on the preceding criteria, is determined by the RWP to be unavailable, grid cells in the most current retained versions of mosaic products to which the NEXRAD had been supplying data shall be supplied with data available from NEXRADs with overlapping coverage so that each cell has the highest priority data level available, as defined in section 3.1.4.1.5.3.1. The RWP shall provide coverage from each available overlapping NEXRAD within a volume scan period plus 45 seconds from the time of the determination of the NEXRAD's unavailability.

Mosaics, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.2 **Mosaic Area.** The mosaic area shall be an adaptable RWP area of interest, in accordance with the **RWP Area Definition** adaptation as defined in 60.4.3.

3.1.4.1.5.3 **Coverage Determination for Image Mosaics.**

3.1.4.1.5.3.1 **Coverage Priority.** Each mosaic altitude class shall have an associated mosaic coverage priority in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6, which contains for each grid cell a hierarchical list (primary, secondary, tertiary, quaternary, or no NEXRAD coverage) of NEXRADs from which to choose the value for that grid cell.

3.1.4.1.5.3.2 **Product Generation.** Each mosaic product shall be generated using the Coverage priority of one of the three mosaic altitude classes, in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6. The class used for each product shall be adaptable, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.3.3 **Contributing NEXRADs Data.** Data for each grid cell in the mosaic area shall be supplied by the highest priority available NEXRAD for that cell.

3.1.4.1.5.3.4 **No Coverage.** All grid cells in the mosaic for which there is no coverage shall be assigned a no-valid-data code, as referenced in 3.1.4.1.4.2 .

3.1.4.1.5.4 **Reconfiguration and Restoration for Image Mosaics.**

3.1.4.1.5.4.1 **Determination Of Unavailability.** A NEXRAD shall be declared unavailable:

- (a) If no RIPS from that NEXRAD are received by the RWP within a volume scan interval plus an adaptable time interval, in accordance with **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6.
- (b) If the meteorologist has caused the NEXRAD to become unavailable for mosaic contribution.

3.1.4.1.5.4.2 **Mosaic Coverage Reconfiguration.** When a NEXRAD, based on the preceding criteria, is determined by the RWP to be unavailable, grid Cells in the most current retained versions of mosaic products to which the NEXRAD had been supplying data shall be supplied with data available from NEXRADs with overlapping coverage so that each cell has the highest priority data level available, as defined in section 3.1.4.1.5.3.1. The RWP shall provide coverage from each available overlapping NEXRAD within a volume scan period plus 45 seconds from the time of the determination of the NEXRAD's unavailability.

Mosaics, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.2 **Mosaic Area.** The mosaic area shall be an adaptable RWP area of interest, in accordance with the **RWP Area Definition** adaptation as defined in 60.4.3.

3.1.4.1.5.3 **Coverage Determination for Image Mosaics.**

3.1.4.1.5.3.1 **Coverage Priority.** Each mosaic altitude class shall have an associated mosaic coverage priority in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6, which contains for each grid cell a hierarchical list (primary, secondary, tertiary, quaternary, or no NEXRAD coverage) of NEXRADs from which to choose the value for that grid cell.

3.1.4.1.5.3.2 **Product Generation.** Each mosaic product shall be generated using the Coverage priority of one of the three mosaic altitude classes, in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6. The class used for each product shall be adaptable, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.3.3 **Contributing NEXRADs Data.** Data for each grid cell in the mosaic area shall be supplied by the highest priority available NEXRAD for that cell.

3.1.4.1.5.3.4 **No Coverage.** All grid cells in the mosaic for which there is no coverage shall be assigned a no-valid-data code, as referenced in 3.1.4.1.4.2 .

3.1.4.1.5.4 **Reconfiguration and Restoration for Image Mosaics.**

3.1.4.1.5.4.1 **Determination Of Unavailability.** A NEXRAD shall be declared unavailable:

- (a) If no RIPs from that NEXRAD are received by the RWP within a volume scan interval plus an adaptable time interval, in accordance with **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6.
- (b) If the meteorologist has caused the NEXRAD to become unavailable for mosaic contribution.

3.1.4.1.5.4.2 **Mosaic Coverage Reconfiguration.** When a NEXRAD, based on the preceding criteria, is determined by the RWP to be unavailable, grid Cells in the most current retained versions of mosaic products to which the NEXRAD had been supplying data shall be supplied with data available from NEXRADs with overlapping coverage so that each cell has the highest priority data level available, as defined in section 3.1.4.1.5.3.1. The RWP shall provide coverage from each available overlapping NEXRAD within a volume scan period plus 45 seconds from the time of the determination of the NEXRAD's unavailability.

Mosaics, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.2 **Mosaic Area.** The mosaic area shall be an adaptable RWP area of interest, in accordance with the **RWP Area Definition** adaptation as defined in 60.4.3.

3.1.4.1.5.3 **Coverage Determination for Image Mosaics.**

3.1.4.1.5.3.1 **Coverage Priority.** Each mosaic altitude class shall have an associated mosaic coverage priority in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6, which contains for each grid cell a hierarchical list (primary, secondary, tertiary, quaternary, or no NEXRAD coverage) of NEXRADs from which to choose the value for that grid cell.

3.1.4.1.5.3.2 **Product Generation.** Each mosaic product shall be generated using the Coverage priority of one of the three mosaic altitude classes, in accordance with the **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6. The class used for each product shall be adaptable, in accordance with the **Mosaic Product** adaptation as defined in 60.3.2.4.

3.1.4.1.5.3.3 **Contributing NEXRADs Data.** Data for each grid cell in the mosaic area shall be supplied by the highest priority available NEXRAD for that cell.

3.1.4.1.5.3.4 **No Coverage.** All grid cells in the mosaic for which there is no coverage shall be assigned a no-valid-data code, as referenced in 3.1.4.1.4.2 .

3.1.4.1.5.4 **Reconfiguration and Restoration for Image Mosaics.**

3.1.4.1.5.4.1 **Determination Of Unavailability.** A NEXRAD shall be declared unavailable:

- (a) If no RIPS from that NEXRAD are received by the RWP within a volume scan interval plus an adaptable time interval, in accordance with **NEXRAD Mosaic Parameter** adaptation as defined in 60.2.6.
- (b) If the meteorologist has caused the NEXRAD to become unavailable for mosaic contribution.

3.1.4.1.5.4.2 **Mosaic Coverage Reconfiguration.** When a NEXRAD, based on the preceding criteria, is determined by the RWP to be unavailable, grid Cells in the most current retained versions of mosaic products to which the NEXRAD had been supplying data shall be supplied with data available from NEXRADs with overlapping coverage so that each cell has the highest priority data level available, as defined in section 3.1.4.1.5.3.1. The RWP shall provide coverage from each available overlapping NEXRAD within a volume scan period plus 45 seconds from the time of the determination of the NEXRAD's unavailability.

3.1.4.2.2 Processing.

3.1.4.2.2.1 Parsing. The RWP shall parse surface observations and FTA/TAF alphanumeric products following the formats specified in chapters D-21 and D-37 in the NWS Operations Manual (WSOM), FMH No.1 and WMO No. 306, using the parsed data to generate fixed field format products, in accordance with the Received Alphanumeric Products adaptation as defined in 60.3.1.1.

3.1.4.2.2.2 Density Altitude Calculation. The RWP shall use the parsed surface observation data to compute the Density Altitude value. The Density Altitude value shall be inserted into the reformatted fixed-field format surface observations, in accordance with the Received Alphanumeric Product adaptation as defined in 60.3.1.1. The algorithm for computing the Density Altitude value shall be as specified in 50.2 of Appendix V.

3.1.4.2.2.3 Error Handling. If RWP is unable to parse a surface observation or FTA/TAF product to the extent required to determine location and time of the reformatted fixed field product, the RWP shall store the raw product in

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3.1.4.2.2 Processing.

3.1.4.2.2.1 Parsing. The RWP shall parse surface observations and FTA/TAF alphanumeric products following the formats specified in chapters D-21 and D-37 in the NWS Operations Manual (WSOM), FMH No. 1 and WMO No. 306, using the parsed data to generate fixed field format products, in accordance with the Received Alphanumeric Products adaptation as defined in 60.3.1.1.

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3.1.4.2.2.3 Error Handling. If RWP is unable to parse a surface observation or FTA/TAF product to the extent required to determine location and time of the reformatted fixed field product, the RWP shall store the raw product in

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3.1.4.2.2 Processing.

3.1.4.2.2.1 Parsing. The RWP shall parse surface observations and FTA/TAF alphanumeric products following the formats specified in chapters D-21 and D-37 in the NWS Operations Manual (WSOM), FMH No.1 and WMO No. 306, using the parsed data to generate fixed field format products, in accordance with the Received Alphanumeric Products adaptation as defined in 60.3.1.1.

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3.1.4.2.2 Processing.

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3.1.4.2.2 Processing.

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3.1.4.2.2.3 Error Handling. If RWP is unable to parse a surface observation or FTA/TAF product to the extent required to determine location and time of the reformatted fixed field product, the RWP shall store the raw product in

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3.1.4.2.2 Processing.

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3.1.4.2.2.3 Error Handling. If RWP is unable to parse a surface observation or FTA/TAF product to the extent required to determine location and time of the reformatted fixed field product, the RWP shall store the raw product in

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3.1.4.2.2 Processing.

3.1.4.2.2.1 Parsing. The RWP shall parse surface observations and FTA/TAF alphanumeric products following the formats specified in chapters D-21 and D-37 in the NWS Operations Manual (WSOM), FMH No.1 and WMO No. 306, using the parsed data to generate fixed field format products, in accordance with the Received Alphanumeric Products adaptation as defined in 60.3.1.1.

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3.1.4.2.2.3 Error Handling. If RWP is unable to parse a surface observation or FTA/TAF product to the extent required to determine location and time of the reformatted fixed field product, the RWP shall store the raw product in

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3.1.4.2.2 Processing.

3.1.4.2.2.1 Parsing. The RWP shall parse surface observations and FTA/TAF alphanumeric products following the formats specified in chapters D-21 and D-37 in the NWS Operations Manual (WSOM), FMH No. 1 and WMO No. 306, using the parsed data to generate fixed field format products, in accordance with the Received Alphanumeric Products adaptation as defined in 60.3.1.1.

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3.1.4.2.2.3 Error Handling. If RWP is unable to parse a surface observation or FTA/TAF product to the extent required to determine location and time of the reformatted fixed field product, the RWP shall store the raw product in

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3.1.4.2.2 Processing.

3.1.4.2.2.1 Parsing. The RWP shall parse surface observations and FTA/TAF alphanumeric products following the formats specified in chapters D-21 and D-37 in the NWS Operations Manual (WSOM), FMH No.1 and WMO No. 306, using the parsed data to generate fixed field format products, in accordance with the Received Alphanumeric Products adaptation as defined in 60.3.1.1.

3.1.4.2.2.2 Density Altitude Calculation. The RWP shall use the parsed surface observation data to compute the Density Altitude value. The Density Altitude value shall be inserted into the reformatted fixed-field format surface observations, in accordance with the Received Alphanumeric Product adaptation as defined in 60.3.1.1. The algorithm for computing the Density Altitude value shall be as specified in 50.2 of Appendix V.

3.1.4.2.2.3 Error Handling. If RWP is unable to parse a surface observation or FTA/TAF product to the extent required to determine location and time of the reformatted fixed field product, the RWP shall store the raw product in

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NEXRAD Technical Requirements and UNISYS Interface Control Documents [2.2.1 (a) & (b) 1]. This adaptation shall consist of at least the following parameters:

- (a) Number of **NEXRAD** sites interfacing with this **RWP** [Static A].
- (b) **Individual** site information:
 - (1) Site ID [Static A].
 - (2) Site **coordinates including latitude, longitude, and elevation** [Static A].
 - (3) Site address [Static A].
 - (4) **Interface type (direct/indirect)** [Static A].
 - (5) **RWP address(es)** [Static A] (source **RWP** if indirect, destination **RWPs if direct**)

There shall be one value for (a), above. For (b) above, there shall be one set of parameters for each of the **NEXRAD** sites that are required by the **RWP**, up to a maximum of 27 sites. There shall be up to 7 destination **RWP** addresses in (b) (5) for sites with a direct interface type.

60.2.2 Individual Radar Product Specification List. This adaptation is used to identify the **RIPs** sent to an **RWP** by **NEXRAD** routinely. This adaptation list shall consist of at least the following parameters:

- (a) **Product** ID [Static A; **Static B for** addition].

There shall be a minimum of one set of parameters for each **RIP** identified in 30.1.1 (maximum of 14).

60.2.3 Image RIP Alert Criteria. This adaptation is used to identify the criteria used in generating alerts based upon **NEXRAD** image **RIPs**. This adaptation shall consist of the following parameters:

- (a) **Product** ID [Static A].
- (b) Data level threshold (0-7) [Dynamic] (default: 0, meaning no alert) .

There shall be at least 8 sets of the above parameters, one for each of the 8-level image **RIPs** listed in Table XI.

NEXRAD Technical Requirements and UNISYS Interface Control Documents [2.2.1 (a) & (b) 1]. This adaptation shall consist of at least the following parameters:

- (a) Number of **NEXRAD** sites interfacing with this **RWP** [Static A].
- (b) **Individual site information:**
 - (1) Site ID [Static A].
 - (2) Site **coordinates including** latitude, longitude, and elevation [Static A].
 - (3) Site address [Static A].
 - (4) **Interface type (direct/indirect)** [Static A].
 - (5) **RWP address(es)** [Static A] (source **RWP** if indirect, destination **RWPs** if direct)

There shall be one value for (a), above. For (b) above, there shall be one set of parameters for each of the **NEXRAD** sites that are required by the **RWP**, up to a maximum of 27 sites. There shall be up to 7 destination **RWP** addresses in (b) (5) for sites with a direct interface type.

60.2.2 Individual Radar Product Specification List. This adaptation is used to identify the **RIPs** sent to an **RWP** by **NEXRAD** routinely. This adaptation list shall consist of at least the following parameters:

- (a) **Product** ID [Static A; Static B for addition].

There shall be a minimum of one set of parameters for each **RIP** identified in 30.1.1 (maximum of 14).

60.2.3 Image RIP Alert Criteria. This adaptation is used to identify the criteria used in generating alerts based upon **NEXRAD** image **RIPs**. This adaptation shall consist of the following parameters:

- (a) **Product** ID [Static A].
- (b) Data level threshold (0-7) [Dynamic] (default: 0, meaning no alert) .

There shall be at least 8 sets of the above parameters, one for each of the 8-level image **RIPs** listed in Table XI.

NEXRAD Technical Requirements and UNISYS Interface Control Documents [2.2.1 (a) & (b) 1]. This adaptation shall **consist** of at least the **following parameters:**

- (a) Number of **NEXRAD** sites interfacing with this **RWP** [Static A].
- (b) **Individual** site information:
 - (1) Site ID [Static A].
 - (2) Site **coordinates including** latitude, longitude, and elevation [Static A].
 - (3) Site address [Static A].
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- (a) **Product** ID [Static A; Static B for addition].

There shall be a **minimum** of one set of parameters for each **RIP** identified in 30.1.1 (maximum of 14).

60.2.3 Image RIP Alert Criteria. This adaptation is used to identify the **criteria used in generating alerts based upon NEXRAD image RIPs**. This adaptation shall **consist** of the following **parameters:**

- (a) **Product** ID [Static A].
- (b) Data level threshold (0-7) [Dynamic] (default: 0, meaning no alert) .

There shall be at least 8 sets of the **above** parameters, one for each of the **8-level image RIPs** listed in Table XI.

NEXRAD Technical Requirements and UNISYS Interface Control Documents [2.2.1 (a) & (b) 1]. This adaptation shall **consist** of at least the **following parameters:**

- (a) Number of **NEXRAD** sites interfacing with this **RWP** [**Static A**].
- (b) **Individual site information:**
 - (1) Site ID [**Static A**].
 - (2) Site **coordinates including** latitude, longitude, and elevation [**Static A**].
 - (3) Site address [**Static A**].
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- (a) **Product** ID [**Static A**; **Static B** for addition].

There shall be a **minimum** of one set of parameters for each **RIP** identified in 30.1.1 (maximum of 14).

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- (a) **Product** ID [**Static A**].
- (b) Data level threshold (**0-7**) [**Dynamic**] (default: **0**, meaning no alert) .

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 - (1) Site ID [**Static A**].
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- (b) **Individual** site information:
 - (1) Site ID [Static A].
 - (2) Site **coordinates including** latitude, longitude, and elevation [Static A].
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APPENDIX VIII

80. APPENDIX VIII RWP SCENARIO FOR "SEVERE STORM" DAY

80.1 Introduction. Assume the scene is the Kansas City Center Weather Service Unit (CWSU) in the Spring with a squall line extending from Western Kansas to the Texas Panhandle and moving eastward. Thunderstorm intensity varies somewhat along the squall line.

80.1.1 Radar Data. Consider the normal Real-time weather Processor (RWP) radar dataload. Assume 21 WSR-88D (NEXRAD) Doppler weather radars in the Area Control Facility (ACF) area plus the boundary area. This scenario assumes on the average each NAS Plane mosaic coverage will be prepared only once every 5 minutes overall.

Each 5 minutes the following Routine Individual Products (RIPs) are received from the 21 radars and Generated Routinely Ingested Products (GRIPs) are prepared.

80.2 Radar products.

80.2.1 Routine Individual Products (RIP) in Radar Plane.

	PRODUCT DESCRIPTION	UNIQUE ID	SOURCE OF PRODUCT
80.2.1.1	Tornado Vortex Signature	TVS	NEXRAD
80.2.1.2	Combined Shear Contour	CSC	NEXRAD
80.2.1.3	Echo Tops	ECH	NEXRAD
80.2.1.4	Velocity Azimuth Display Wind Profile (from 12 radars)	VWP	NEXRAD
80.2.1.5	Storm Tracking Information (Centroid Tracker) (from 10 radars)	STI	NEXRAD
80.2.1.6	Hail Index (from 8 radars)	HIX	
80.2.1.7	Mesocyclone (from 8 radars)	CYC	NEXRAD

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80.2.1.4	Velocity Azimuth Display Wind Profile (from 12 radars)	VWP	NEXRAD
80.2.1.5	Storm Tracking Information (Centroid Tracker) (from 10 radars)	STI	NEXRAD
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